Montgomery County Council

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Berliner Calls for 'Big, Bold Thinking' at MPSC to Advance Utility 2.0

Energy Future Coalition Completes Utility 2.0 Pilot Framework

NEWS RELEASE

ROCKVILLE, Md., May 14, 2013—In a formal pleading filed today, Councilmember Roger Berliner called on the Maryland Public Service Commission to move forward with implementation of a "Utility 2.0" pilot program that would transform the delivery of electric service to Montgomery County residents. The Energy Future Coalition, tasked by the Governor's Grid Resiliency Task Force to offer recommendations for such pilot programs, submitted its report and recommendations on March 15th as requested. The report, entitled "Utility 2.0 -- Piloting a Better Future for Maryland's Electric Utilities and their Customers", was included in Councilmember Berliner's filing and is now formally before the Commission.

> "The Governor's Task Force asked for "big, bold thinking" and the Energy Future Coalition delivered. Their detailed report lays out numerous paths to a far better energy future -- a system truly worthy of the 21st century -- cleaner, more reliable, efficient, technologically advanced and consumer driven. Montgomery County residents deserve nothing less," said Councilmember Berliner. "But the institutional challenges are real. As EFC observed, while the technology exists to support a revolution in utility service, our regulatory model is a vestige of century-old thinking and our utilities are inherently conservative and not innovators. It is the job of our state regulators who have 100% control over our utilities to ensure that we fully grasp the benefits of a transformed utility system. I urge them to accept this challenge and move Montgomery County and Maryland forward."

Berliner, Chair of the Council's Transportation, Infrastructure, Energy, and Environment Committee, called on the PSC to "request public comment on the recommendations made by EFC, form work groups as appropriate, and move forward with implementing pilot programs that provide our residents with the quality and reliability of distribution service that is appropriate for the 21st century."

The Energy Future Coalition outlines a framework for the Utility 2.0 pilot comprised of several key attributes, including:

- Performance-based ratemaking: aligning the financial returns of utilities with how it performs on key metrics;
- Having a smarter, customer-driven grid: giving customers more control over their energy consumption using advanced, real-time technologies;
- "On-bill" financing: allowing utilities to finance and customers to repay efficiency investments directly through their bill;
- Micro-grids: that will allow large customers and neighborhoods to use distributed, renewable power with far greater reliability;
- Support for electric vehicle deployment: utility provides substantial initial cost vouchers in exchange for customers allowing the utility to manage their charging.

The full text of Berliner's pleading and the Executive Summary of EFC's report, "Utility 2.0: Piloting a Better Future for Maryland's Electric Utilities and Their Customers," are attached.

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Petition to Open Investigation Into Utility 2.0 – The Future of Maryland's Grid	*	BEFORE THE PUBLIC SERVICE COMMISSION OF MARYLAND _____ MAILLOG NO. _____ ADDENDUM TO MAILLOG NO. **145759**

THE ENERGY FUTURE COALITION'S
REPORT AND RECOMMENDATIONS
IN RESPONSE TO THE REQUEST
OF THE
GOVERNOR'S GRID RESILIENCY TASK FORCE

The Honorable Roger Berliner
Montgomery County Council
Chair, Transportation, Infrastructure
Energy & Environment Committee
100 Maryland Avenue
Rockville, MD 20850

Dated: May 14, 2013

On March 5, 2013, Petitioner asked this Commission to broaden its focus – but not its commitment – beyond reliability and to open an investigation into "Utility 2.0: The Future of Maryland's Grid" and for this broader inquiry to be consolidated with the proceedings that flow from Order No. 85385.[1] As Petitioner argued then, there can be little debate that our current system is both antiquated and failing to provide the quality and nature of services appropriate for the 21st century, including, but certainly not limited to reliability.

Petitioner's submits that the magnitude of the investment contemplated to bring about acceptable reliability – more than $1 billion in Pepco's service territory alone – requires the Commission to ensure that these investments are aligned with the investments necessary to bring about the next generation of utility service, Utility 2.0. By aligning these investments, investments made possible by the contributions from our hard-pressed ratepayers, Maryland can leap to the forefront nationally in providing our ratepayers with a more cost effective, efficient, cleaner, technologically advanced, consumer driven and less vulnerable distribution system.

The petition was predicated upon the work requested by the Governor's Grid Resiliency Task Force from the Energy Future Coalition (EFC) to begin mapping out a possible path to such a future. As the Task Force said at the time:

> "[t] he Task Force concurs with the analysis offered by the Energy Future Coalition, that ***this is a transformative time in Maryland's energy future, and that big, bold thinking is required*** [emphasis added]…The Task Force thought seriously about the recommendations proposed by the Energy Future Coalition to use a pilot approach to transition the electric utility industry into a new, "Utility 2.0" model. While the proposal was too vague for the Task Force to embrace it at this time, it appreciates the progressive thinking of the Coalition and is interested in learning more about the potential of a pilot program in Maryland to explore how to best enable utilities to meet the myriad challenges that are awaiting them."[2]

1. Attachment 1 without exhibits, Petition to Open Investigation into Utility 2.0 – The Future of Maryland's Grid.

2. "Weathering the Storm", Report of the Grid Resiliency Task Force, September 24, 2012, Recommendation 11 at p. 89.

The Energy Future Coalition provided its report and recommendations, "Utility 2.0: Piloting a Better Future for Maryland's Electric Utilities and Their Customers", as requested by the Task Force on March 15th and its report and recommendations are attached hereto (Attachment 2). The report and recommendations more than fulfill the Task Force's request for "big, bold thinking." The EFC actively sought and received input from a broad spectrum of industry leaders and is to be highly commended for initiating what Petitioner hopes is a serious public conversation. The report offers a compelling vision of an energy future that is more reliable, cost-effective, green, energy efficient, consumer directed, and technologically advanced.

The EFC also supports Petitioner's view that it is important for the Commission to look beyond reliability:

> "[D] ecision-makers in Maryland should consider and potentially adopt changes intended to go beyond efforts to improve reliability and resiliency of the system to embrace the broader technological, environmental, economic, and competitive trends clearly beginning to revolutionize utility-customer relationships."[3]

Moreover, the EFC makes clear we cannot rely upon either the investor owned utilities or our current regulatory models if we want a utility service worthy of the 21st century. In the words of the EFC, the regulatory model that exists today is a "vestige … of … century" old thinking.[4] At the same time, "[u] tilities are not good innovators, but are highly risk-averse and conservative entities."[5] This is not a combination that will lead to a future that Marylanders, and certainly the citizens of Montgomery County, desire and deserve. The urgent task of bringing about this better future falls upon this Commission.

The EFC's recommendations, summarized briefly here, are less of a blueprint than a framework for two pilot programs – one in Pepco's service territory and one in BGE's service territory. The EFC describes the goal of their pilots in the following terms:

> "A pilot project is an experiment carried out in a real-world setting with a willing electric utility, its willing customers, and other stakeholders and third parties, all adopting, presumably within a defined area of the utility's territory, new technologies, practices, and even incentives and rewards in an effort to identify

3. Utility 2.0: Piloting a Better Future for Maryland's Utilities and their Customers, Energy Future Coalition, pg 6.

4. *Ibid*, pg 20.

5. *Ibid*, pg 27.

changed roles, behaviors, and results that offer a better outcome than the current model."[6]

According to the EFC, the following attributes are key to a different – and far better – energy future:[7]

- Performance Based Ratemaking – Aligning the financial returns of the utility to how it performs on the metrics that matter most: cost, reliability, customer service, adoption of smart grid technologies and services, and support for alternate energy.

- A "Smarter" and "Customer" Driven Grid – A grid that takes advantage of real time pricing and today's technology and allows willing home owners and utilities to control their energy consumption appliance by appliance, which will minimize energy costs and maximize grid efficiency.

- "On-bill" energy efficiency financing – Allowing utilities to finance and customers to repay efficiency investments on their bills.

- Micro-Grids – Micro-grids can not only provide back-up reliability capacity, but can also enable "islanding" for both large customers and neighborhoods -- **"**separate integration and control of distributed generation, storage, and demand response."

- Facilitating electric vehicle deployment – Utilities would offer substantial initial-cost vouchers to purchasers of battery electric vehicles who agree to allow the utility to manage their charging.

This brief summary does not begin to do justice to the level of detail and quality of policy analysis included in the EFC's 37 page report (plus appendices). The EFC's recommendations are, in many respects, consistent with the work of the Perfect Power Institute, whose work has previously been filed with the Commission, and who has called for "a revolution that would compel utilities to evolve, to focus more on consumer needs and service quality."[8]

What is clear is that the EFC has more than fulfilled its commitment to try to help Maryland envision and achieve a far better energy future. Petitioner believes that now it is the

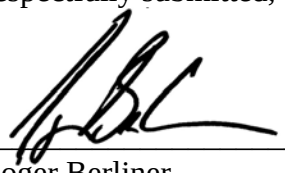
6. *Ibid*, pg 7.

7. *Ibid*, pgs 2-3.

8. *An Electric Revolution, Reforming Monopolies, Reinventing the Grid and Giving Power to the People*, Galvin Electricity Initiative, Jay Stuller, p. 7.

Commission's turn. Petitioner urges, as set forth in its March 5th filing, the Commission to request public comment on the recommendations made by the EFC, form work groups as appropriate, and move forward with implementing pilot programs that provide our residents with the quality and reliability of distribution service that is appropriate for the 21st century.

Respectfully submitted,



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Attachment 1 (without Exhibits): Petition to Open Investigation into Utility 2.0 – The Future of Maryland's Grid

Attachment 2: Energy Future Coalition Report – "Utility 2.0: Piloting a Better Future for Maryland's Electric Utilities and Their Customers".

UTILITY 2.0

Piloting a Better Future for Maryland's Electric Utilities and their Customers

Submitted to Governor Martin O'Malley

March 15, 2013

by the

Energy Future Coalition

Executive Summary

The Energy Future Coalition was charged by Governor Martin O'Malley of Maryland, in response to a recommendation from the Governor's Task Force on Grid Resiliency, with "scoping out a Utility 2.0 pilot proposal and reporting back to the Governor and the Task Force, by March 15, 2013, on a viable method to explore the contours of the utility of the future." This document responds to that charge.

This pilot design proposes testing (1) the application of new technologies, strategies, and practices in the day-to-day functioning of electric utility service in a pilot project area; and (2) matching changes in utility business practices and reward structures as well as the regulatory scheme under which Maryland's utilities operate. It is intended to be incremental to the many progressive policies and tests of new utility technology and regulation already going on today in Maryland.

This pilot project design presents six categories in which progress toward the utility of the future should occur:

- Reliability and resiliency, aimed at ensuring continuous, high-quality service;
- Residential customer optionality, centered on bringing smart grid information, analysis, control and savings to small customers;
- Large customer optionality, optimizing costs and services for big customers;
- Utility system upgrades, making the grid's technical operations more visible, flexible, and able to convey and react to real-time information;
- Utility business model changes, keeping utilities financially viable even if they deliver less electricity; and
- Regulatory model adjustments, adapting the mechanisms for public-interest oversight and consumer protection to new utility technologies.

For each of these categories, the report presents a statement of the assumptions, facts, and potential that guided the selection of pilot project elements for inclusion in the design. One cannot design a pilot project without having a vision of the future in mind; these categories, taken together, describe elements of Maryland utility service that could be feasible and viable and embrace technology-driven change.

The report identifies individual elements that are recommended for inclusion in one or more pilot projects that might be authorized and carried out in Maryland utility service areas. These recommendations are not specific to particular technologies or technology vendors; they are based on the extensive inputs, conversations, submissions, and research that the Energy Future Coalition reviewed as part of this process. **Table 1** (beginning at page 14) lists multiple pilot project elements that could be part of future operations and opportunities in each of the six categories.

These individual elements are the pieces of a potential pilot project, like the pieces of a jigsaw puzzle; they need to be assembled to achieve a unified result, like a completed puzzle. One or more pilot projects containing these various elements would enable regulators, state officials, and the public to evaluate the feasibility and merits of the following six important attributes that, in the Energy Future Coalition's view, ought to be key aspects of the electric utility of the future:

1. **Aligning utility compensation with customers' changing needs and values.** The proposed project design would adopt a set of five performance parameters that, taken together and evaluated through objective metrics, would be used to vary the utility's rate of return on equity by up to one percent above or below the otherwise allowed return for satisfactory service. The performance parameters would be: cost, reliability, customer service, adoption of smart grid technologies and services, and support for alternate energy. The key innovation proposed here is to base the relative weighting of these factors on customers' own rankings of their importance. This information will provide utilities with a geographically detailed understanding of their customers' priorities, and a direct incentive to serve those priorities. As a second, separate possible innovation, customers' bills could be adjusted based on how well the utility serves their individual priorities. Such a design feature, testable in a pilot project, would provide valuable insight not only on the effect of modifying utility compensation to align it with customer service priorities, but also on encouraging a more positive, less passive, and more mutually beneficial utility-customer relationship, with strong communication going both ways.

2. **Supporting utility investment in an interoperable, integrated suite of smart-grid technologies, not only on its own system, but on the premises of willing customers.** Digitally operated and informed devices are available now for both utility systems and customer applications, enabling a more responsive and efficient system that makes utilities and customers partners in its operation. The pilot project would allow the utility to evaluate and install on its own system a suite of integrated technologies that meet high standards for interoperability and operational effectiveness, and also to provide and install them for willing customers on their premises. The utilities and regulators would endorse, and help customers obtain from their energy suppliers, real-time or highly differentiated time-of-use rates. Customers would then have the ability to optimize their own energy use in response to daily, weekly, and seasonal fluctuations in the cost

of energy. Customers could also choose to give the utility remote access to their power-consuming devices under an agreement that would compensate them, through purchase cost rebates, lowered costs of service, or both, for helping the utility maintain system power quality and reliability in a changing power-supply environment. The utility would need to enhance its customer service to support such customers with technical and efficiency expertise. The costs of the systems would be assigned to the customers accepting them except where the utility system as a whole would benefit from the new flexibility, voltage-regulation potential, and decrease in outages.

3. **Allowing utilities to finance and customers to repay system-related and efficiency investments on their bills**. This step would provide access to up-front capital for customers eager to embrace new smart-grid options or improve their energy efficiency despite lacking the money to invest. Such loans would reflect the utility's own low cost of capital and would be recorded against the property where the installations are made, providing repayment security that would help to justify the utility's continued access to low-cost capital. This would also ensure that the energy efficiency of those properties would be revealed in real-estate transactions, for which utilities could provide requested information.

4. **Optimizing automated system sectionalizing and reclosing to facilitate micro-grids for areas where customers could safely provide their own energy during an outage and achieve other goals.** Automated sectionalizing and reclosing equipment has been demonstrated to increase dramatically the areas of continued service by segregating areas directly affected by a storm-caused outage. Maryland's utilities are already implementing these options; BGE has proposed to include a new project in this pilot design. This same technology could also permit sections of the grid that lack power during an outage to be energized safely by local sources. At a minimum, willing groups of customers could install, or have the utility install, and finance on their utility bills, generation capacity geared toward meeting critical power needs during an outage. Microgrid installations ought to be seen and tested as going beyond back-stop resiliency measures, however; they can facilitate integration of storage, localized system management, integration of local renewable and distributed energy sources, and local demand response. They potentially offer a different basis for future grid control, with utilities operating or coordinating system operations among an integrated set of microgrids, using central resources as necessary to keep them all stable and supplied with energy from conventional and renewable generation. Maryland should use any pilot project opportunity to test the microgrid opportunities beyond mere back-up reliability capability to include separate integration and control of distributed generation, storage, and demand response.

5. **Facilitating electric vehicle deployment and utility benefit from utility-controlled vehicle battery charging.** The potential for rapid growth of battery-electric vehicles in Maryland presents the promise of major new services and new load in a market for power that might otherwise shrink, but could create a problem if this major new load is not served in a controlled and timed manner. Under this project utilities could offer substantial initial-cost vouchers to

purchasers of battery electric vehicles who agree to allow the utility to manage their charging time – not only to maintain and stabilize voltage levels, but also to deal with transient voltage and energy anomalies such as cloud shadows in areas with significant solar penetration.

Using a pilot project to test innovations in electricity service is not a novel concept. Maryland's utilities have already embarked on a significant number of important modernization efforts and experiments, and detailed these for the benefit of this project; they are summarized in the report and the utilities' presentations for the project are reproduced in the Appendix. The EmPOWER Maryland efficiency program already sets high goals for energy efficiency for Maryland's utilities, and Maryland's participation in the Regional Greenhouse Gas Initiative (RGGI) obligates the electric sector to integrate meaningful carbon pricing. The pilot project elements proposed herein are intended to be incremental to those already under way, but may propose steps in the same directions in which other efforts are moving at present.

The pilot project design presented here does not endorse specific technology offerings or the companies behind them, nor does it attempt to specify which utility service areas should be proposed for a pilot project. It does not specify separate projects for Pepco or BGE; indeed, there would be much to gain from similar pilots undertaken in each of the major utility service territories, perhaps using different approaches. Each of the elements proposed would require more analysis, planning, and consideration of alternatives than has been possible during the short period available for preparation of this pilot design. Some might be best considered as extensions or variations on efforts already under way. Any combination of such elements would require further assessment of potentially compounding effects. The Energy Future Coalition recognizes that any implementation of this pilot design would require much further analysis and a considerable period of preparation, in addition to a major effort to communicate its purposes and any costs or risks to the customers invited to participate.

The appendices that follow this report list the individuals and entities who proposed ideas to the Energy Future Coalition and who were willing to be identified, as well as notes and utility presentations from a day-long consultation on the parameters of this project, held on February 1, 2013. The Energy Future Coalition is grateful for their many contributions, but bears sole responsibility for this report.